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October 9, 2009

Forest Practices Board Members
PO Box 47012
Olympia, WA 98504-7012

RE: Forests and Fish Program – Completion of Clean Water Act Review

Ladies and Gentlemen:

The Washington State Department of Ecology has completed the 2009 Clean Water Act (CWA) review of the state's forest practices and adaptive management programs. We are now releasing the enclosed findings paper broadly to stakeholders and the public. Although the paper was completed in early July 2009, I wanted to have a chance to evaluate the commitment forests and fish participants have in taking the steps needed to strengthen the existing program. Such a commitment is crucial to ensuring the state's forest practices program can be depended upon to bring or maintain forested waters in full compliance with the state water quality standards and the federal CWA.

In September, I had a chance to meet with the key stakeholders as part of the Forest Ecosystem Collaborative sponsored by Commissioner Goldmark. While the group grappled with many thorny and complicated issues, and its work is not done, it is clear that we all share a goal of finding ways to strengthen the existing programs and to look for innovative approaches to resolve many of the broader problems facing the timber industry in Washington.

After carefully weighing the level of stakeholder commitment and the benefit of providing a clear path to maintaining CWA coverage, I have decided to conditionally extend the CWA assurances. This extension is based on meeting a scheduled set of milestones for program improvements and research development. It is vital to maintaining the assurances into the future that the list of CWA milestones is incorporated into the planning process of the state's forest practices and adaptive management programs. My hope is that by releasing the CWA findings now, and thereby formalizing the milestones, partners in the forest practices and adaptive management programs will move swiftly to take the required action necessary to accomplish the needed improvements and research milestones.

Sincerely,

Jay J. Manning,
Director

Enclosure

cc: EPA
Forests and Fish Policy
Forest Practices Board Liaisons
NMFS
USFWS

2009 Clean Water Act Assurances Review of Washington's Forest Practices Program

Examining the effectiveness of Washington's forest practices program in bringing waters into compliance with state water quality standards and the federal Clean Water Act

Washington State Department of Ecology

July 15, 2009

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Introduction

Under Washington state law (Chapter 90.48 RCW) forest practices rules are to be developed so as to achieve compliance with the state water quality standards and the federal Clean Water Act (CWA). The Department of Ecology (Ecology) has been designated as the state water pollution control agency for all purposes of the CWA, and has been directed to take all action necessary to meet the requirements of that Act. The Clean Water Act assurances (CWA assurances) granted by Ecology in 1999 as part of the Forests and Fish Report (FFR) expired June 30, 2009. The assurances established that the state's forest practices rules and programs, as updated through a formal adaptive management program, would be used as the primary mechanism for bringing and maintaining forested watersheds into compliance with the state water quality standards.

This paper summarizes the findings of a review by Ecology on the progress the state's forest practices program is making in bringing waters into compliance with state surface water quality standards (Chapter 173-201A WAC) and the federal Clean Water Act. This review is being used as the basis for determining whether or not to extend the CWA assurances into the future.

As detailed below, Ecology finds that the Forests and Fish program has not achieved the level of information needed to verify that water quality in the forested environment will meet water quality standards, or to verify that the conditions for offering the assurances in 1999 have been satisfied. In spite of these shortcomings, Ecology believes the Forests and Fish program still offers a viable and compelling management strategy for achieving water quality goals in the forested environment. Ecology has concluded, therefore, that continuation of CWA assurances is warranted if specific actions are taken to improve the program's performance.

Summary of Findings

In 1999 as part of the FFR (http://www.dnr.wa.gov/Publications/fp_rules_forestsandfish.pdf), Ecology in consultation with the United State Environmental Protection Agency established the CWA assurances. In 1999, Ecology assumed ten years would be sufficient time to test the forest practices rules and to identify trends in water quality improvement. That expectation has not been met. After ten years, no studies have been completed or data collected that provide an indication of whether or not the forest practices rules are improving water quality or maintaining forested waters in compliance with the water quality standards. Similarly, data is lacking with which to conduct a thorough analysis of how effective operational and enforcement programs are in applying the forest practices rules.

The foundation for granting the CWA assurances was the belief that the FFR was a substantial step forward in environmental protection, and when implemented would provide the quickest and most efficient means for achieving environmental goals and compliance with the state's water quality standards. Developing CWA mandated total maximum daily loads (TMDLs) to serve as regulatory water cleanup tools for forested watersheds was therefore viewed as a low priority, and the CWA assurances established that Ecology would rely on the FFR-based forest practices program for an initial ten-year period. It was assumed in 1999 that research and

monitoring would occur to demonstrate that implementing the FFR would improve water quality and eventually bring forested waters into full compliance with the state's surface water quality standards and thereby also satisfy the conditions under Section 303 of the federal CWA.

The original FFR language is not clear on whether or not it was intended that the assurances could be extended beyond the 2009 deadline, but nothing in the report fundamentally alters Ecology's authority to continue to rank conducting TMDLs on forest lands subject to the FFR rules as a low priority with or without the existence of formal assurances. The value of offering formal assurances is that they provide landowners and agencies with a predictable and consistent regulatory system; and in doing so provide an additional motivation for stakeholders to participate in the adaptive management program.

As part of this 2009 review, Ecology has examined all of the written conditions for maintaining the assurances established in Schedule M-2 of the 1999 Forests and Fish Report. Ecology has also examined all of the issues highlighted in a supplemental 2006 Ecology White Paper. The 2006 paper was written to let stakeholders to the FFR process know some of the specific information Ecology would need for this 2009 review.

Ecology has concluded the forest practices and adaptive management programs have not fully met the expectations of research and program performance that underlie the basis for providing the CWA assurances. The adaptive management program has not provided the information needed to validate the effectiveness of the rules in protecting water quality. In fact, no field studies or assessments have been completed that test the ability of the rules to meet state water quality standards. Moreover, these studies are still many years away from completion, and the budget for the science program is set to be significantly reduced. Staffing cuts are expected over the next year or two that may further impact the ability of the various elements of the forest practices and adaptive management programs to operate at past levels. Added to the direct effect of reduced staffing, several key stakeholder groups openly express a growing lack of support for continuing with the current adaptive management program.

The lack of information to evaluate the effectiveness of the rules can in part be attributed to the initial priorities established in the FFR that placed validating operational aspects of the rules ahead of water quality studies. However, the adaptive management program (AMP) has also had significant trouble developing and using the research results developed as part of these initial prioritization agreements (i.e., last fish habitat model, uppermost point of perennial flow, desired future conditions basal area target).

Improvements in the system are necessary to create a program that participants can rely on to provide a more efficient and confident program for testing the effectiveness of the rules in protecting water quality and modifying the rules as appropriate.

State laws establish that the forest practices rules must be designed to achieve compliance with the state water quality standards and placed Ecology in the lead for making this determination. However, the Legislature also formally established the adaptive management program as the primary mechanism for bringing the rules into alignment with the state standards. The current program, even with its challenges, creates a well established foundation for moving ahead.

Policy and procedure manuals guide the process; full time professional project managers and Cooperative Monitoring, Evaluation, and Research (CMER) program staff are available to assist CMER volunteer scientists in carrying out their projects; and Forest and Fish Policy (Policy) representatives of the various stakeholder caucuses remain engaged at present and have advanced strategic plans to improve their own performance as well as the performance of the overall program. On the operational side, the compliance monitoring program has been established and is constantly expanding as time goes on, guidance documents and training continue to improve, and experienced agency staff stand ready across the state to implement the rules.

Taken in total, the forest practices program provides a substantial framework for bringing the forest practices rules and activities into full compliance with the water quality standards. Ecology has concluded it is in the best interests of water quality, and is consistent with legislative intent, to work with the other participants to make needed improvements to the existing program. Ecology is therefore conditionally extending the CWA assurances with the intent to stimulate the needed improvements to the forest practices and adaptive management programs. Ecology, in consultation with key stakeholders, has established specific corrective milestones (shown in the next section). The extension of the assurances is conditioned on meeting these research and administrative milestones by the specific target dates described. These milestones serve as a corrective action plan necessary to retain the assurances into the foreseeable future.

Steps are already being taken to address many of the corrective milestones associated with operational issues, compliance monitoring, and assessing progress under Road Maintenance, Abandonment, and Planning (RMAP) rules. Based on this ongoing progress, Ecology fully expects these steps to be successful in the short-term. Ecology's highest concern going forward is with the adaptive management program. These concerns are greatest regarding the ability to fund the needed studies and assessments at a rate that creates a viable science-based program. Scientific studies and assessments need to be designed to provide Policy and the Forest Practices Board (Board) with information sufficient to enable these policy makers to make informed science-based policy decisions. Just as importantly, policy makers must be committed to using science to fairly and efficiently revise the forest practices rules and programs as needed.

Compliance with the milestones described herein will demonstrate sufficient progress to satisfy the CWA assurances and the adaptive management provisions of the state water quality standards (WAC 173-201A-510(3)). Because extending the assurances is based on meeting the specific research and administrative milestones identified above by the specific dates listed, failure to meet any milestone would be considered a basis for potentially withdrawing the assurances at that time. In evaluating compliance with the milestones established herein, Ecology will consider the cause for missing any milestones and be considerate of the fact that:

- The state and nation are both experiencing a severe economic recession and it may take a couple of years before funding to fully support the AMP is available.
- Unexpected and uncontrollable circumstances may cause deviations from this schedule, such as catastrophic events causing the loss of study sites.
- Until a project has a study design developed, it is not possible to identify an accurate time frame for its completion (or in some cases to determine if the project remains a CWA priority).

To be successful in meeting these milestones and consequently the CWA assurances, the caucus principals will need to work together to find funding and to support the actions needed to meet the specific milestones. Ecology is working therefore to support the strategic goal to bring together the principals as soon as practical to renew and maintain a spirit of cooperation and collaboration among the six caucuses.

Considerations and Corrective Milestones

The following lists the conditions[1] that are the basis for continuing to provide the CWA assurances to the state's forest practices program (shown in bold font). Similar conditions have been grouped together into categories. Following the list of conditions is a summary of the key findings (shown in italics) and the corrective remedies identified as "milestones". These milestones are intended to create a corrective action plan that ensures steady incremental improvement and provides a basis to continue the assurances. Failure to meet any milestone by the deadline established would be cause for Ecology to revoke the assurances at that point in time.

Many of the remedies identified necessarily focus on the state Department of Natural Resources (DNR). This focus recognizes DNR has primary responsibility for implementing the Forest Practices Act and rules and supporting the adaptive management program. DNR has been working cooperatively with Ecology and others to enact solutions to many of the issues noted below both prior to and independent of this CWA review.

I. Establish Rules and Funding to Implement the Forests and Fish Report

Conditions for retaining the assurances include:

1. **Having final regulations consistent with the Report.***
2. **No significant loss of funding or staffing to the state regulatory agencies dedicated to forest practice regulation or monitoring.***
3. **Court orders, changes to the CWA, state or federal regulatory changes that cannot be otherwise addressed.***
4. **No weakening of enabling State statutes or regulations which affect the Report and its implementation.***

[1] Conditions in this context refers to the "Reopeners, Modifications, and Causes of Withdrawal of Assurances" noted in Schedule M-2 of the Forests and Fish Report as well as to those described as necessary in Ecology's January 11, 2006, Clean Water Act Assurances White Paper provided to the Forests and Fish Policy Committee and the Forest Practices Board to help provide a more detailed description of some of the information Ecology would need for this 2009 review. Items directly called out in Schedule M-2 are shown followed by an asterisk.

Discussion: The CWA Assurances were provided based on establishing and maintaining an adequately funded and operationally effective forest practices program that implements the FFR. Meeting this requires that DNR and the other resource agencies and cooperators provide and maintain adequate staffing and funding to keep the field operations and adaptive management programs running effectively. It also requires that no significant changes to laws and regulations take place that undermine the foundation of water quality protection established in the FFR.

These conditions for retaining the assurances have not been fully met. Rules were initially adopted to implement the FFR, and substantial resources were put into action to implement a formal adaptive management program. Countering these successes, however, staffing has not been adequate to fully implement the rules and programs, changes have been made to the laws that weaken some of the original protections established in the FFR, and significant reductions in staffing and funding have recently occurred that are likely to remain over the next two to three years as the state's economy recovers from the current recession.

Remedies identified to support continuation of the assurances include:

(a) Federal pass-through funding has diminished since the inception of the FFR and is predicted to be depleted in the second half of the 10-11 biennium. In addition, the state and nation are both suffering through the worst economic period on record since the great depression. Continued CMER funding is based partially on general fund state revenue in DNR's budget and partially on timber tax revenue. At this time the state is experiencing cuts to the general fund, and harvesting with its associated revenue stream has declined by approximately fifty percent. Recognizing the likelihood of budget shortfalls in the adaptive management program, it is important that water quality studies be designated as high priority, and efforts made to ensure their timely completion. The adaptive management program should also develop strategies to make better use of partnerships (e.g., monitoring consortium, Puget Sound Partnership, USFS) and to prepare to compete for grant monies. This may in part necessitate developing study plans with the intention of having them ready to compete for outside funding as sources emerge. In addition, it is imperative that new dedicated long term funding sufficient to carry out the requirements of the FFR be secured as soon as possible, as a reliance on grants is unlikely to be either workable or sufficient to maintain an adequate program.

Milestones:

1) **By July 2009, and in subsequent budget and planning years, the AMP Administrator with the assistance from the Policy and CMER committees will send to the Forest Practices Board a revised CMER work plan and budget that places key water quality studies as high priorities as described in section II(c) regarding the adaptive management program.**
2) **By September 2009, the Forest and Fish Policy Budget Committee will identify a strategy that will be implemented with caucus principal support to secure stable, adequate, long-term funding for the AMP.**

(b) Ecology recognizes some procedures can have the practical effect of creating shortfalls in staffing where those same staff resources would otherwise be adequate. Problems with the water type modification (WTM) requests are an example of this. WTM requests often do not receive field reviews due to the inadequacy of resource agency staffing. This situation occurs predominately when the water type modification request forms are passed along to the tribal and state resource agency personnel in large batches for the DNR-mandated 30-day review period. This makes it problematic for existing staff in the resource agencies and tribes to review all of the requests. As a consequence, many are approved without an appropriate level of review. Efforts are needed to ensure water type modification requests are adequately evaluated by resource agency staff. Compounding the workload issues associated with reviewing WTM forms, concerns continue to persist about how protocol surveys are conducted and the conditions established for multidisciplinary teams to conduct their reviews in the field. The practical effect is that resource agency staff must invest substantial time to re-affirm what is established in formal protocols and guidance. Most of these problems relate to the improper recognition of what constitutes barriers to fish migration and can likely be remedied by the use of more training and guidance and adherence to the Board Manual Section 13 and WAC 222-16-30 and -31. Problems also occur related to placing unreasonable expectations on multidisciplinary review teams - such as scheduling the site visit during periods of heavy snow cover or at the same time interdisciplinary teams have been called elsewhere in the region. These types of issues interfere with the effective use of available staff resources and generally impair the overall integrity of the program.

Milestones:

(1) By February 2010, DNR in consultation with WDFW, Ecology, and the tribes will develop a prioritization strategy for water type modification. The intent of this strategy will be to manage the number of change requests sent to cooperating agencies for 30-day review so it is within the capacity of those cooperators to respond to effectively. The strategy should consider standardizing the current ad hoc process of holding monthly coordination meetings with agency and tribal staff in all the DNR regions. This should allow group knowledge and resources to be more efficiently used to evaluate change requests.

(2) By March 2010, DNR Forest Practices will establish online guidance that clarifies existing policies and procedures pertaining to water typing. The intention is to ensure regional staff and cooperators remain fully aware of the most current requirements and review processes for changing water type and coordinating the review of multidisciplinary teams.

(3) By February 2011, DNR in consultation with WDFW, Ecology, and the Tribes will complete an evaluation of the relative success of the water type change review strategy. Results of this review would be used to further refine the strategy.

(c) Approximately fifty percent of the state's private forests are owned by small forest landowners (SFL). Subsequent to the FFR, the Legislature modified the inventory, planning, and reporting requirements for SFL roads (RCW 76.09.410 and 76.09.420).

Rather than requiring Road Maintenance and Abandonment Plans (RMAPs) for all their roads, SFLs must submit a checklist RMAP in association with any forest practice application (FPA). This checklist RMAP process requires that roads used in association with that FPA be brought up to current road standards, but it does not address any of the landowner's roads that would not be used for that harvest. To understand if SFL roads are posing a threat to water quality, DNR should work with Ecology to find innovative ways to follow through with its current proposal to assess the condition and rate of compliance of SFL roads. Ecology believes this is an important survey and intends to work with DNR to develop a means that could be used to get this work done with existing staff and funding, if additional resources are not made available by the Legislature. Ecology's focus is on assessing the potential delivery of sediment to waters of the state. In developing a survey plan, DNR should consider opportunities to add this task to site visits associated with funding fish passage projects on SFL parcels, to use cooperative assistance similar to that used to evaluate the success of hardwood conversions on SFL properties, and other cost effective means to accomplish this work.

Milestone:

(1) By July 2010 Ecology in partnership with DNR, and in consultation with the SFL advisory committee, will develop a plan for evaluating the risk posed by SFL roads for the delivery of sediment to waters of the state.

(2) By November 2013 Ecology in partnership with DNR, and in consultation with the SFL advisory committee will prepare a summary report that assesses the progress of SFLs in bringing their roads into compliance with road best management practices, and any general risk to water quality posed by relying on the checklist RMAP process for SFLs. If a significant portion of SFL roads are estimated to pose a risk of damage to public resources, then a report will be prepared in time to brief the Legislature in December 2013.

II. An Adaptive Management Program to Update Rules and Guidance

Conditions for retaining the assurances include:

1. **No new water quality standards not anticipated in this (Forests and Fish) Report unless those new standards can be accommodated with adaptive management.***

2. **No general failure to upgrade regulations or guidance called for in adaptive management. This includes failure to develop agreed upon resource objectives, research priorities, and compliance monitoring programs.***

3. **Development of an approved Adaptive Management Program (AMP) section in the Forest Practices Board Manual that will provide formal procedures for participants to successfully link science questions to policy decisions.**

4. **Establishment of a Cooperative Monitoring, Evaluation, and Research Committee (CMER) Work Plan that includes water quality-related projects that have been prioritized for funding and includes program integration across spatial scales.**

5. **Easy access to reports and data from the AMP on the Internet so the information can be used in existing public processes associated with the Clean Water Act.**

6. **Specific resolution by CMER of the following issues:**
   - **Develop a protocol for identifying perennial stream initiation points.**
   - **Estimate the current status of stream temperature and riparian stand conditions on forest lands.**
   - **Evaluate the reach-scale effectiveness of riparian buffer prescriptions at providing adequate shading post-harvest to protect stream temperatures.**
   - **Evaluate the cumulative effects of harvest on stream temperature.**
   - **Evaluate the cumulative effects of forest practices on sediment input and stream habitat.**

Discussion: The CWA assurances were established on the condition that an effective adaptive management program (AMP) would be established and maintained. A healthy and effective AMP is central to the ability of Ecology to offer the CWA assurances. The AMP needs to provide a scientific framework for testing whether the forest practices rules are effective in protecting water quality, and for identifying any changes needed to rules not found effective. Substantial progress has been made through establishing the structure and formal operational procedures of the AMP. An AMP board manual was developed to further outline how the program should operate, and significant funding and effort has occurred to get scientific studies underway to test various portions of the rules and guidelines governing forest practices.

In spite of these substantial efforts, the AMP has not completed any studies that directly test the effectiveness of the rules in protecting water quality. The science arm of the AMP has also been largely unsuccessful in providing research findings the Forest and Fish Policy Committee (Policy) and the Forest Practices Board (Board) will reliably use to validate or to revise the forest practices regulations and guidance. There are significant problems with the ability of the policy and science arms of the AMP to work together to test and revise the rules in a timely and effective manner. Part of the problem is simply inherent in a program that seeks to develop consensus among stakeholders with competing interests. But the problems also seem rooted in the foundation of the AMP itself. AMP participants frequently disagree about the appropriate roles of science and policy, as well as what role the initial negotiated forests and fish rules should play in evaluating the acceptability of future changes. These disagreements appear in part to stem from a lack of clarity in the underlying rules and guidance. Combined with poor communication between the science and policy arms of the program, this is compromising the AMP's effectiveness. To the credit of its participants, strategic planning efforts are underway with the intention of identifying and correcting the shortcomings of the program. The Policy committee has developed a strategic plan (see Appendix) with five broad goals supported by multiple objectives and specific tasks designed to revitalize the adaptive management program. There is also general understanding that

testing the effectiveness of the rules for protecting water quality must be a top priority if Ecology is to continue the assurances.

The state legislature (RCW 76.09.370) directed that forest practices rules covering aquatic resources only be adopted or changed by the Board where those changes are consistent with recommendations resulting from a scientifically based adaptive management process. The stated purpose of having the adaptive management process is to make adjustments as quickly as possible to portions of the forest practices rules that are not achieving resource objectives. Both as a participant and reviewer, Ecology has concluded that fundamental improvements are needed to ensure the rules and associated programs will be tested and revised in a timely manner based on scientific inquiry, as intended by the legislature and consistent with CWA assurances.

Remedies identified to support continuation of the assurances include:

(a) Much of the recent conflict among participants of the adaptive management program is centered on disagreements about what constitutes the proper roles of the Board, Policy, and CMER in revising rules and guidelines; and what the role of science and economics should be in the decision making process. The roles of CMER and Policy should be clarified, and revisions should be made to the decision-making process as needed to ensure science remains the foundation for changing the forest practices rules. Improved communication between CMER and Policy is needed with the aim of ensuring that CMER studies have the greatest potential to provide answers that Policy will use to validate or suggest revisions to the forest practices regulations and guidance. The adaptive management program (CMER, Policy, and Board) would benefit from an outside audit on its performance, structure, and decision-making framework. Such outside audits should occur periodically (perhaps every five years) and be used to actively improve the program. This remedy is consistent with the first goal of the Strategic Goals, Objectives, and Tasks document recently completed by the Policy Committee (see Appendix). To ensure the AMP's operations are transparent to the public, the results of these audits should be discussed at the Forest Practices Board.

Milestones:

(1) By December 2009, the AMP program administrator, with the assistance of CMER and Policy, will complete the ongoing training sessions on the AMP protocols and standards for CMER, and Policy. This is intended to remind participants of the agreed upon protocols. Opportunity should also be provided to identify portions of the protocols and associated rules that need revision to improve performance or clarity. Any identified improvements to the Board Manual or regulations should be implemented at the soonest practical time. Subsequent to this effort, the administrator will offer to provide this training to the Board.

(2) By December 2010, the AMP Program administrator shall initiate the process of obtaining an independent review of the Adaptive Management Program. This review shall be done by representatives of an independent, third party research organization and include:

i. **An examination of the structure and function of the program, based on its technical performance, fiscal efficiency, and overall accountability.**
ii. **An assessment of the performance and efficiency of the consensus-based decision processes.**
iii. **A review of the rigor of CMER science and whether it productively adds to the body of Pacific Northwest region science to confidently address the L-1 Questions.**
iv. **An evaluation of the interactions of science and policy within the AMP.**
v. **Identification of any different approach the AMP could employ to assure a more certain and timely outcome of projects and commensurate changes to rules and guidelines.**

Upon completion, the results of this independent review shall be taken to CMER and Policy to develop responses and recommendations for any needed corrections. Within six months of completion, the report along with the responses of the CMER and Policy committees will be provided to the Board. Ecology will be engaged in discussions with cooperators to examine ways to initiate this important task as soon as possible.

(b) The amount of forest that must be retained in buffers to protect water quality and other public resources is dependent on the type of the waterbody. Non-fish bearing perennial streams (Type Np) receive substantially less forested buffers than do fish bearing waters. Ecology contends that the prescriptions associated with the Type Np rules have the greatest potential risk of violating the water quality standards. To apply the Np rules as intended requires the identification of the point at which the flow becomes perennial (flows year round in a normal water year). Ecology needs to know at the soonest possible time if the Np rules are effective in protecting water quality. At this time, however, there is no protocol for determining the highest point of perennial flow initiation, no information for assessing how accurate the current best professional judgment-based approach is in identifying the uppermost point, and no studies completed to test the effectiveness of the Np rules in protecting water quality and other public resources. Sufficient Type N studies are contained within the CMER work plan to allow a science-based assessment of the protection and relative risks provided by the existing prescriptions. However, the first study to assess the effectiveness of the Np rules in protecting water quality will not be done until September 2012. To support sound decision-making, it is important that Policy and CMER work together to establish a strategy to expediently ensure rules associated with Type Np waters maintain those waters in compliance with the state water quality standards. This strategy needs to include at a minimum: (1) development of a protocol for identifying with reasonable accuracy the uppermost point of perennial flow - this could be a new approach or validation and documentation of the existing approach; (2) an updated review of the scientific literature pertaining to buffering streams sharing the physical characteristics of Np streams; (3) ranking and funding of the Type N studies as highest priorities for CMER research; and (4) identification of key research questions that caucus participants want answered in preparation for a review of the Type N rules -such as the effect of not-buffering dry stream segments.

Milestones:

(1) By July 2010, Policy, in consultation CMER, will develop a strategy to examine the effectiveness of the Type N rules in protecting water quality at the soonest possible time. This strategy needs to include at a minimum:

- **i. Ranking and funding of the Type N studies as highest priorities for CMER research.**
- **ii. By July 2012, developing a protocol for identifying with reasonable accuracy the uppermost point of perennial flow, or develop documentation demonstrating the spatial and temporal accuracy of the existing practice used to identify this point;**
- **iii. By September 2012, completing a comprehensive literature review examining the effect of buffers on streams physically similar to the Type Np waters in the forest practices rules prior to completion of the Type N basalt effectiveness study. This should be conducted or overseen by CMER (or conducted by an independent research entity).**

(c) After almost ten years, no CMER studies have been completed that inform whether or not the forest practices rules can be relied on to bring waters into compliance with the state water quality standards and the CWA. In addition, the state in general, and the AMP in particular, are facing an increasingly difficult budget situation and will not be able to maintain the level of research effort it has in the past without an infusion of new resources. To directly address the need to have water quality-related projects prioritized for funding, the annual CMER work plan and budget exercise should be used to formally establish and maintain water quality studies as high priorities in the adaptive management program. A prioritized list of projects and milestones is presented in Table 1 below to help focus the budget prioritization effort and to ensure water quality studies are expediently pursued. Table 1 shows the water quality priorities and general timeframes for study development needed to support continuation of the CWA assurances. Ultimately, the success of any program of studies will be determined when the studies are finished. It will be critical, therefore, that ongoing and planned studies be designed to assess compliance with the water quality standards, and that follow-up studies needed to provide finer resolution are expediently planned and implemented. Such follow-up studies are not described in this document but will need to be addressed as they arise and as the milestones listed herein are met.

Milestones:

(1) By July 2009, and in subsequent planning years, the projects identified by Ecology in Table 1 will be reflected in the CMER budget and work plan in a manner that establishes a priority schedule for study development. Failure to meet any of the milestones identified without prior consent by Ecology may be viewed as a basis to revoke the CWA assurances at that point in time.

(2) By December 2009, the AMP Manager with the assistance of the co-chairs of Policy and CMER will initiate a process for flagging projects for the attention of Policy that are having trouble with their design or implementation. This process should identify projects not proceeding on a schedule reflecting a realistic but

expedient pace (i.e., a normal amount of time to complete scoping, study design, site selection, etc.).

Table 1: List of Research Milestones to Support Continuation of CWA Assurances	
	Task Description
2009	Complete: Hardwood Conversion – Temperature Case Study
	Study Design: Wetland Mitigation Effectiveness
	Study Design: Testing the Accuracy of Unstable Landform Identif.
2010	Complete: Mass Wasting Prescription-Scale Monitoring
	Implement: Wetland Mitigation Effectiveness (Pilot)
	Study Design: Amphibians in Intermittent Streams (Phase III)
	Study Design: Type N Experimental in Incompetent Lithology
	Scope: Mass Wasting Landscape-Scale Effectiveness
	Scope: Eastside Type N Effectiveness (new study needed)
2011	Complete: Bull Trout Overlay Temperature
	Complete: Solar Radiation/Effective Shade
	Implement: Eastside Type N Effectiveness
	Implement: Amphibians in Intermittent Streams (Phase III)
	Implement: Type N Experimental in Incompetent Lithology
	Study Design: Mass Wasting Landscape-Scale Effectiveness
	Scope: Wetland Management Zone Effectiveness Monitoring
2012	Complete: Type N Experimental in Basalt Lithology
	Complete: Buffer Integrity-Shade Effectiveness
	Complete: Wetland Mitigation Effectiveness
	Complete: Amphibians in Intermittent Streams (Phase III)
	Implement: Testing the Accuracy of Unstable Landform Identif.
	Scope: Wetland/Stream Water Temperature Interactions
2013	Complete: First Cycle of Extensive Temperature Monitoring
	Scope: Effectiveness of RMAP Fixes
	Scope: Wetland Hydrologic Connectivity
2014	Study Design: Effectiveness of RMAP Fixes
	Scope: Type F Experimental Buffer Treatment
2016	Complete: Type N Experimental in Incompetent Lithology
	Scope: Watershed Scale Assess. of Cumulative Effects
2017	Complete: Eastside Type N Effectiveness (new study needed)
	Study design: Watershed Scale Assess. of Cumulative Effects
2018	Complete: Roads Sub-basin Effectiveness
	Implement: Watershed Scale Assess. of Cumulative Effects

III. Consistent Compliance and Enforcement of the Forest Practices Rules

Conditions for retaining the assurances include:

1. **No failure to implement the rules for any reason.***
2. **No lack of enforcement of forest practices on the part of state regulatory agencies.***
3. **No broad scale landowner non-compliance exists with meeting the forest practice regulations or the FFR.***
4. **If an individual landowner fails to implement forest management practices or demonstrates a pattern of non-compliance, such as repeated enforcement actions, the assurances may be withdrawn for that landowner. All available enforcement and other options under federal and state law will be considered. This will include, but not be limited to: the requirement for a TMDL; enforcement of water quality standards violations and forest practice laws and regulations.***
5. **Documentation based on compliance monitoring data demonstrating that the rules are being implemented in a reasonably consistent manner across in each DNR region.**
6. **Documentation based on compliance monitoring data demonstrating when the rules are different for small landowners than for large landowners, what level of compliance is being achieved by each landowner category.**
7. **Documentation based on compliance monitoring data demonstrating how well rules regarding water quality protection measures such as riparian buffers; road construction, maintenance and abandonment; alternate plans; and unstable slope requirements are being implemented.**
8. **Results of an analysis of alternate plan compliance with standards in the rules that evaluates whether alternate plans provide protection to public resources at least equal in overall effectiveness as default forest practices prescriptions.**

Discussion: The CWA assurances were conditioned on the ability to demonstrate the forest practices rules are being consistently and effectively applied at all scales – statewide, DNR region, and individual landowner. In the discussion and milestones that follow, the CMP is often identified as a vehicle for satisfying the formal corrective milestones; however, Ecology would support the use of alternative programs and stand alone initiatives if they would be more effective.

Statewide compliance patterns. From a statewide perspective, DNR has done an admirable job in developing a formal program to assess compliance. The compliance monitoring program (CMP) does a good job at assessing overall compliance rates with selected conditions in approved forest practices applications (FPA). The draft 2006/2007 biennial

compliance report, for example, provides sound evidence that no significant difference exists in rates of compliance with FPA conditions between large and small forest landowners. Preliminary results from the draft report found that seventy-five percent of the riparian activities evaluated were in compliance on both small and industrial landowner lands. Of the road activities evaluated, eighty-seven and eight-six percent were in compliance on small and industrial landowner lands, respectively. Ecology field staff actively participating in the forest practices program support the contention that landowner compliance is reasonably good statewide. However, the statistics demonstrate that approximately one out of every four riparian prescriptions evaluated experienced at least some level of non-compliance. This fact suggests initiatives are needed to identify the causes of non-compliance and to reduce the incidence level.

A significant concern for Ecology is that the CMP is focused on assessing compliance with only select provisions of approved FPAs. This means the CMP is not providing an adequate assessment of compliance with other important provisions of the forest practices rules related to water quality protection. Only compliance with provisions established in an approved FPA that can be readily evaluated during a short field visit are currently being assessed in the CMP. Critical areas of omission from formal compliance assessment efforts include:

1. *Water typing decisions (wetland versus lake or stream, fish-bearing versus non fish-bearing, seasonal versus perennial).*
2. *Designation of channel migration zones and inundated and associated wetlands.*
3. *Unstable slope rules.*
4. *Measurements of bankfull stream width.*
5. *Adherence to streamside shade rules.*
6. *Haul roads used to remove the harvested timber.*

In addition, no program exists to determine if approved alternate plans are equal in overall effectiveness as compared with the default forest practices rules.

Regional and landowner compliance patterns. The CMP has not provided information that allows compliance patterns to be assessed at either regional or landowner scales. Ecology staff reports that forestry staff within the DNR regions are generally doing an excellent job of applying and enforcing the rules. However, staff and other cooperators often express the belief that regional differences exist in the application of the forest practices rules and in undertaking enforcement actions. Without unbiased data on regional compliance patterns, however, these concerns can neither be confirmed nor dismissed.

General issues. There is no effective mechanism in place to resolve disagreements between members of field review teams or conflicts over enforcement decisions in a timely manner. This is particularly a problem when DNR staff is a party to the disagreement since DNR is the final arbitrator of the forest practices rules.

Remedies identified to support continuation of the assurances include:

(a) Past problems with getting concerns addressed over the content and procedures included in the CMP suggests significant value may accrue through the formation of the newly authorized CMP stakeholder guidance committee. Ecology strongly encourages DNR to continue to engage key cooperators in finalizing a charter for the committee that defines the roles and the decision-making process to be used. Many of the remedies discussed would be appropriately handled by that committee.

Milestone:

(1) By October 2009, DNR will complete the Charter for the Compliance Monitoring Stakeholder Guidance Committee and determine which issues identified herein related to compliance monitoring will be dealt with by the committee. This is intended to help move these issues forward on schedule as well as to flag the items for which an alternative process for resolution is needed.

(b) The Compliance Monitoring Program (CMP) does not currently examine compliance with numerous rule elements of importance to protecting water quality. The existing structure of the CMP may preclude an assessment of compliance with some of these rule elements. In such cases, separate studies are needed to supplement the current CMP. Separate studies or CMP assessment methodology are needed to examine the level of compliance with rule requirements for water typing, shade, wetland identification and mitigation, unstable slopes, channel migration zones, and haul roads. More detailed guidance and training should also occur to enhance consistency in defining the boundaries for measuring bankfull width and channel migration zones.

Milestone:

(1) By December 2009, DNR in partnership with Ecology and with the aid of the CMP stakeholder guidance committee, will develop general plans and timelines for exploring options and data collection methods for assessing compliance with rule elements such as water typing, shade, wetlands, haul roads and channel migration zones. The goal is to initiate these programs by December 2011.

(c) Disagreements occur at both the field and policy level regarding interpretations of regulations and guidance. These disputes are often allowed to continue unresolved and carry-over to other situations for very long periods of time. These disputes result in the unequal application of the rules and guidelines between landowners and regions, as well as wasting limited staff resources and harming professional working relationships. DNR should ensure an effective formal procedure exists to efficiently resolve field disputes. This procedure should include participation by appropriate representation of policy and technical experts from participating caucuses. The objective is to ensure timely investigations occur of the concerns of any participating cooperators regarding field determinations, but the more paramount objective should be to identify the underlying basis for the disagreement and minimize its reoccurrence in the future through revised training, guidance, or rules.

Milestone:

(1) By December 2009, DNR with assistance of Ecology and WDFW, will evaluate the existing process for resolving field disputes and identify improvements that can be made within existing statutory authorities and review times. Although resolution of the specific issue at hand should be a goal, the overarching purpose of this milestone is to establish a process that will identify the basis for the dispute and to put in place revised guidance, training, reporting pathways, other measures that will minimize the reoccurrence of similar disputes in the future. This process should consider how to best involve the appropriate mix of both policy and technical participants to thoroughly resolve the issue at hand.

(d) Training is needed to decrease conflict among cooperators engaged in compliance assessments, and to minimize noncompliance rates that may be due to a misunderstanding of the forest practices rules and guidance.

Milestone:

(1) By June 2010, DNR with consultation with Ecology and WDFW (or with the CMP stakeholder guidance committee), will establish a framework for certification and refresher courses for all participants responsible for regulatory or CMP assessments. This will be focused on aiding in the application of rules regarding bankfull width, CMZ boundaries, application of road rules, and wetlands. Consideration should be given to including a curriculum of refresher courses on assessing difficult situations.

(e) The current compliance rate of seventy-five percent for riparian prescriptions contained in approved FPAs is not sufficient to support long-term maintenance of the assurances.

Milestone:

(1) By July 2010, DNR with the assistance of Ecology, will assess the primary issues associated with riparian noncompliance (using the CMP data) and formulate a program of training, guidance, and enforcement believed capable of substantially increasing the compliance rate – with a goal of getting greater than ninety percent compliance by 2013. Ecology will consider of the rating of noncompliance since not all infractions have the same effect on public resources (e.g., is it predominately at levels within reasonable field method limits or likely to occur even with due diligence) when determining if this compliance target rate milestone has been satisfied.

(f) The conditions established in the FFR for granting the assurances necessitate tracking compliance at both a broad scale and at the landowner level. The existing CMP has not been collecting information at a pace that allows comparisons to occur at the regional or landowner level. In addition to satisfying the CWA Assurances, there is a need to track compliance issues at the landowner level to support both voluntary (training) and regulatory (escalating enforcement) corrective mechanisms as part of DNR's existing compliance and enforcement programs. Recognizing that a random sample-based program will unlikely be capable of identifying non-compliance patterns at the landowner

scale, DNR should work with Ecology, WDFW, and the Tribes to determine the best alternative mechanism to identify problem landowners. In resolving this issue, the use of both informal and formal enforcement documents should be evaluated as an adjunct to the data collected from the CMP.

Milestone:

(1) By June 2010, DNR, Ecology, and WDFW will meet to review existing procedures and recommended improvements needed to more effectively track compliance at the individual landowner level. The goal will be to ensure the compliance pattern of individual landowners can be effectively examined by October 2010. This should consider the types and qualities of enforcement actions that occur (e.g., conference notes, notices of correction, stop work orders, penalties). These procedures and their effectiveness in identifying compliance trends at the landowner level will be reassessed by Ecology by October 2012 to ensure the program provides sufficient information to take action where appropriate to remove the CWA assurances and take any other necessary corrective action with landowners having persistent compliance problems.

(g) Alternate plans allow significant deviations from the forest practices rules and result in trading different forms of natural resource protections in space and time (such as sacrificing short-term shade to get large woody debris more quickly) so long as the resulting alternate plan "provides protection to public resources at least equal in overall effectiveness as provided by the act and rules" (WAC 222-12-040). No program exists to validate that approved plans are complying with this foundational element of the alternate plan rules. At present, the program represents the application of the best professional judgment of DNR foresters and other cooperators invited to participate as part of field advisory teams. It is important to begin collecting a sample of baseline data (a resource inventory) on alternate plans before and after the harvest. This is needed to create a foundation that will allow a general assessment of whether alternate plans are equal in overall protection to the baseline rules and whether they are meeting the state water quality standards.

Milestone:

(1) By October 2010, DNR in partnership with Ecology, and in consultation with WDFW, the Tribes, and the SFL advisory committee, will design a sampling plan to gather baseline information sufficient to reasonably assess the success of the alternate plan process. This sampling plan should include how to select sample sites, how to best document the content and assumptions contained in the alternate plan, what to monitor and how frequently to do so, and responsibilities for who will conduct the sampling. The goal of this effort is to initiate data collection in the 2011 field season.

IV. Programs to Bring Roads up to Design and Maintenance Standards

Conditions for retaining the assurances include:

1. **Road Maintenance and Abandonment Plan (RMAP) results that are readily available, including: where RMAPs are complete, a summary of all active, orphan, and abandoned roads.**
2. **Results of an analysis of small forest landowner roads not yet covered by RMAPs or checklist RMAPs. The goal of the analysis is to estimate whether these roads potentially threaten water quality, so that strategies can be developed or modified to assure they reach the 2016 goal.**

Discussion: Ecology maintains that it is very important to ensure roads are on track to comply with construction and maintenance standards by 2016 as mandated in the forest practices rules. This recognizes the high concern regarding the impact of road design and maintenance on protecting water quality. DNR reports that large landowners are predominately on schedule to meet the 2016 target date for bringing all their roads into compliance. This, coupled with successful CMER studies on the effectiveness of road prescriptions, should allow Ecology and the forest practices program to identify a level of prescriptions and ongoing maintenance and monitoring that will meet the CWA objectives into the long term. This would be a substantial success and one that Ecology, DNR, and the other cooperators should continue to focus on. One problem with the RMAP program is that it was not designed to allow an outside assessment of its progress or input into the priorities chosen for road and culvert repair. Such an assessment is made more difficult by the fact that the data is collected and stored in different formats by different landowners and regions. While Ecology is reasonably confident that DNR is correctly assessing that landowners are on track to meet the 2016 goal and are not deferring priority work, some effort is needed to help provide tools that will better illustrate the basis for that assessment.

The story is much less clear for the roads maintained by small forest landowners (SFL). These landowners occupy approximately fifty percent of the private forestlands in the state, and it is critical that they also be on a course to success. The state Legislature eliminated the planning requirements for SFL, making it very difficult to know how well their roads are being maintained in compliance with water quality standards and other resource objectives. DNR was charged by the Legislature with conducting two interim assessments on the status of roads on SFL properties. The first briefing period was in December 2008, but provided no actual direct assessment of the condition, risk, or progress of SFL roads. The second briefing date is December 2013. But if substantial problems exist that are not identified until 2013, there is little chance corrective action can be taken in time to reach the 2016 target for bringing roads into compliance with current management practices. Ecology's concurrence at the Forest Practice Board regarding the action taken to revise the SFL RMAP requirements in April 2006 was based in part on commitments by DNR to in part assess the overall compliance rate of SFL roads. This commitment remains important and is reflected below as a formal milestone.

Remedies identified to support continuation of the assurances include:

(a) It would facilitate tracking progress with RMAPs if the original plan to complete a GIS forest roads layer and getting all the RMAPs into a GIS framework could be accomplished. Alternatively, a reporting structure is needed that summarizes progress to date and activities still remaining to allow Ecology and other interested parties to gain more confidence that roads are on target to meet the 2016 deadline.

Milestones:

(1) By January 2010, as part of the regional RMAP annual meeting process, DNR should ensure opportunities are being provided in all the regions to obtain input from Ecology, WDFW, and tribes formally participating in the forests and fish process regarding road work priorities.

(2) By December 2011, DNR with the assistance of large landowners, will provide summary information for all industrial landowners having RMAPs. The summary information will include at a minimum: Date RMAP completed, total miles of road covered under the RMAP, total miles of road brought up to standards, total number of fish barriers removed, and a brief statement describing the strategy for bringing all roads into compliance by 2016 that demonstrates even-flow or otherwise provides confidence compliance will be attained by 2016. If reasonable and feasible, the summary will show the annual progress on road and barrier improvement that has occurred since the inception of the RMAP, and DNR will provide a master summary for all industrial landowners combined.

(b) To understand if the checklist RMAP process is effective in protecting waters of the state, it is critical DNR work with small forest landowners (SFLs) to assess the rate of compliance with road maintenance and abandonment requirements on road segments with the potential to deliver sediment to waters of the state prior to the 2013 legislative update.

Milestones:

(1) Milestones to address this issue were established in Part I of this paper.

V. Landowners to Share Data

Conditions for retaining the assurances include:

1. **Landowners will share water quality data collected in cooperative research, adaptive management, and TDML development. Landowners are further encouraged to share all pertinent data to assist in water quality planning efforts.**

Discussion: Within the CMER program, landowners have actively participated in conducting scientific studies and supplying environmental data associated with those studies. Some landowners have also cooperated in sharing data to assist in developing TMDLs in

mixed use watersheds (includes non-forestry activities). Landowners have not otherwise freely shared water quality data collected on their land. It is important to note, however, the specific language in the assurances encourages but does not require landowners to share water quality data outside of the listed programs.

Ecology considers this condition to currently be met and no remedies needed.

VI. Training and Technical Assistance to Improve Implementation

Conditions for retaining the assurances include:

1. **Establishing a manual with detailed guidance regarding contents and approval processes for alternate plans.**
2. **Implementing the regional unstable landform Identification project.**
3. **Identifying high landslide hazard areas.**
4. **Training to identify potentially unstable slopes.**
5. **Training programs for operators on road maintenance and construction standards.**
6. **Outreach to small forest landowners on protecting public resources.**

Discussion: The CWA assurances were conditioned on developing tools and programs that provide ongoing guidance to landowners and cooperators on the effective implementation of the forest practices rules.

- *The requisite alternate plan board manual was developed in 2007, and processes are in place to continue to revise and improve that manual over time as issues arise.*
- *An evaluation occurred to verify that no regionally unique forms of unstable slopes existed that would need supplemental guidance, and DNR provides regular training around the state for foresters and other professionals interested in enhancing their ability to identify unstable slopes. DNR also provides lists of qualified experts who are available to assist landowners in identifying potentially unstable slopes and meeting the forest practices rule requirements for those sites.*
- *Rules and a board manual have been produced that describe the requirements for constructing and maintaining roads. In addition, Ecology has assisted DNR in providing training to the DNR regional offices on road standards and, working together, have just completed an updated round of training for forestry and water quality staff. Training on road BMPs also takes place through the contract loggers' association, and some of the large landowners require loggers to have taken this before they will contract with them.*

In 1999, the Washington State Legislature authorized a Small Forest Landowner Office (SFLO) within DNR. The SFLO was directed to serve as a "resource and focal point for small forest landowner concerns and policies" with a goal to improve the economic viability and environmental quality of small forestland holdings. The Family Forest Fish Program

administered out of the SFLO has provided twelve million dollars in assistance that has opened up 439 miles of fish habitat, helping also to reduce sediment and improve water quality. The SFLO provides training on road maintenance twice a year to hundreds of small forest landowners and provides stewardship planning classes to help SFLs manage their land.

Given the generally high confidence that guidance and outreach programs will continue to be updated as needed, all of the training and outreach conditions linked to the CWA assurances are considered to have been met except where noted as a milestone elsewhere herein. One element that has not been completed satisfactorily is the identification of high landslide hazard areas. The Landslide Hazard Zonation (LHZ) project was created to provide an improved screening tool by describing and mapping all potentially unstable slopes in priority watersheds. The LHZ project also provides information useful for selecting appropriate mitigation action. GIS data created from this project (landslides and hazard zones) are available from DNR. Considerable progress has been made in completing the LHZ project. Staff vacancies were recently filled and the program was making reasonable progress in mapping landslide hazards. Against these fine accomplishments, however, there still remains a majority of the state to map and even at the current pace it will be many more years before all the commercial forest lands in the state have been completed. Of the 229 watersheds that were originally prioritized, 129 were deemed critical. DNR estimates they may be able to complete the 129 by 2013 if all goes as planned and they can retain their current workforce. Unfortunately, the recent budget cuts associated with the current economic downturn has resulted in proposed cuts to the LHZ program that may impede its progress.

Ecology considers this condition to currently be met and no remedies needed.

Supplemental Recommendations

The preceding section established milestones intended to serve as a mandatory corrective action plan for extending the CWA assurances. Some issues were identified as part of this review that do not rise to the level of a mandatory milestone, but that if addressed may benefit the forest practices and adaptive management programs. These are provided as recommendations that do not affect Ecology's decision on whether or not to continue to offer the CWA assurances.

(a) To better assess the adequacy of staffing and funding, DNR should continue to audit the forest practices program's ability to effectively and consistently implement the forests and fish rules. To the extent feasible, these audits should consider the staffing of all cooperators integral to field teams and address whether a lack of staffing is affecting the overall success of the program in effectively implementing forests and fish rules and protecting water quality. As has been noted by several cooperators in reflecting on this concern, adequacy is not just boots on the ground but includes having the right people trained correctly with the right tools and implementing the rules correctly. For just this reason, it is imperative that the issue be addressed through a broad framework of assessment, training, and audits. DNR has a process for conducting audits of regional office performance. Ecology recommends that those audits continue at regular intervals with some method provided to track changes in performance. While serving as a mechanism to assess general adherence to standard processes and to identify potential weaknesses, the audits do not directly assess adequacy of staffing or success in meeting rule elements. This gap in performance assessment information, however, can likely be filled by strengthening the compliance monitoring program. Needed improvements to the compliance monitoring program are discussed separately in this document.

(b) Ecology provides necessary water quality expertise that is at risk of loss due to a lack of dedicated, dependable, and adequate funding. Ecology should explore alternate funding opportunities for Ecology staff. A work assessment should also be conducted by Ecology with the assistance of DNR to identify where additional resources may be needed, or where they should be redirected to better protect water quality.

(c) The AMP Administrator with assistance from the Policy and CMER committees should identify a strategy to work in partnership with other research institutions and entities, and to be in the best position to apply for new monies as they become available.

(d) Past and ongoing CMER studies and their associated data are not readily available or housed in any defined location. This puts this information at risk of being lost, and makes it largely inaccessible to the public as well as to AMP participants who could otherwise use the information to improve the efficiency of ongoing and planned studies. To help ensure the availability of reports and data generated through the AMP, the current efforts by DNR to scan all CMER reports into digital formatting should be supported. The effort of CMER and the Northwest Indian Fisheries Commission to develop an archival and GIS-based data acquisition system should similarly be supported.

(e) Ecology and the Adaptive Management Program should actively encourage voluntary efforts to further expand the role of landowners and other cooperators in data collection programs. Expanding the ability of landowners, tribes, and other cooperators to provide data to assess status and trends would enable a more robust sampling program, and potentially provide an ability to separate regional from statewide trends.

(f) The potential damage to water quality and public resources from unstable slopes is significant, and completion of the LHZ mapping program provides important supplementary information to help landowners identify unstable slopes. DNR should continue to look for ways to fully fund the LHZ mapping program to ensure that all of the priority watersheds are completed in the shortest practical time.

(g) Ecology finds a need for a summary of the state of the knowledge with regards to the potential impact of the forest practices rules on amphibians. This should be done at the earliest practical opportunity and include both CMER and Policy representatives in an effort to understand whether the program is collecting the information needed to address rule effectiveness.

Appendix: Adaptive Management Program Strategic Goals, Objectives, and Tasks

Forests & Fish Report Vision for Adaptive Management: "An Adaptive Management program is necessary to monitor and assess implementation of forest practices rules and achieve desired resource objectives. Adaptive Management is a formal process for evaluating the current resource status and, over time, for evaluating the effectiveness of rules and guidance in protection, maintenance, and enhancement of habitat necessary to meet resource goals and objectives, for making adjustments to forest practices on a regional or statewide basis, and for requiring mitigation, where necessary, to achieve resource objectives." (Forests & Fish Report, p. 70)

Goal 1: Assess and improve Adaptive Management Program efficiency and effectiveness

Objective 1: On an ongoing basis, assess the efficiency and effectiveness of the program in meeting the Program's mission and vision.

Task 1: AMPA / CMER Co-Chairs - By December 2008, develop a timeline estimating when critical questions in the CMER work plan will be answered.

Task 2: Forest Practices Operations ADM/ CMP Manager - By December 2008, a steering committee or other collaborative process, shall be established to guide and make recommendations on compliance monitoring efforts. Such a steering committee will need to meet in a timely manner so delays don't occur in the training of survey crews and the collection of field data.

Task 3: AMPA / CMER Co-Chairs - By January 2009, synthesize CMER work completed since 2000, summarize knowledge gained and assess progress towards answering FFR Adaptive Management key questions.

Task 4: Policy Co-Chairs / AMPA / CMER Co-Chairs - By January 2009, clarify when and how research and monitoring results will be used to assess current rules and policies, i.e., should action be recommended in response to each project in a program, or should all projects in a program be completed before action is recommended, or something in between? Review and document decision with caucus principals as necessary.

Task 5: AMPA / CMER Co-Chairs / CMP Manager - By March 2009, determine timing and coordination between compliance monitoring and effectiveness monitoring projects, and report results to Policy. (Note - Task 5 is dependent upon the timing of task 2. The intent is to complete task 5 within three months of the compliance monitoring steering committee's (or similar collaborative process) acceptance of the revised compliance monitoring design. More will be known about the timing of task 2 by the end of this month.)

Task 6: Policy Co-Chairs / AMPA / CMER Co-Chairs - By March 2009, review the CMER Work Plan to ensure programs/projects are prioritized appropriately tightly focused on FFR resource objectives/performance targets and key deadlines/time frames are identified.

Task 7: CMER Co-Chairs - By April 2009, revise the CMER Work Plan to incorporate key components of CMER science synthesis, reflect Policy's prioritization of projects, and include project schedule estimates.

Task 8: AMPA / CMER Co-Chairs - By December 2009, synthesize applicable non-CMER research for priority topic areas identified as a result of completing Tasks 1, 2, and 6.

Objective 2: Every ten years the structure, process, and performance of the Adaptive Management Program will be independently reviewed.

Task 1: Policy Co-Chairs / AMPA / CMER Co-Chairs - By January 2010, obtain independent review of the Adaptive Management Program. This review shall be done by representatives of independent, third party research organizations and include:

- An examination of the structure and function for technical performance, fiscal efficiency and overall accountability.
- An assessment of the performance and efficiency of the consensus-based decision processes.
- A review of the rigor of CMER science and the responsiveness of CMER work to body of PNW region science that is applicable to the L-1 Key Questions.
- An evaluation of the interactions of science and policy within the AMP.

Goal 2: Reestablish and maintain productive, collaborative caucus relationships

Objective 1: In order to more productively resolve contentious forest practices issues, the Department of Natural Resources (DNR) will lead efforts to renew and maintain cooperation and collaboration among the six caucuses as an alternative to competitive lobbying and litigation.

Task 1: Commissioner of Public Lands - By January 2009, convene a meeting of caucus principals to determine their commitment to the Timber, Fish & Wildlife (TFW)/Forests & Fish Report (FFR) vision and ground rules, review caucus relationships, reinforce responsibilities and recognize capacity challenges of caucus representatives, and review how economic viability intersects with the Adaptive Management Program.

Task 2: Caucus Principals - By February 2009, write a joint letter summarizing outcomes of Task 1 and giving appropriate direction to caucus representatives.

Task 3: Policy Co-Chairs / AMPA / CMER Co-Chairs - By April 2009, develop and implement a plan to improve understanding and conformance with WAC 222-12-045, the TFW / FFR ground rules and responsiveness to Board Manual Section 22 guidance.

Goal 3: Secure adequate program funding and enhance communications

Objective 1: To ensure funding is available for caucus participation in the AMP as well as priority research and monitoring projects, the Forest Practices Division Manager, in cooperation with caucus principal support, will lead efforts to obtain stable, adequate, long-term funding.

Task 1: F&F Policy / Caucus leads - Support DNR's unstable slopes decision package, which includes a request to double the GF-S Adaptive Management fund from $1.2M per biennium to $2.4M.

Task 2: Policy Budget Committee - By June 2009, develop a plan to obtain dependable, long-term funding adequate for participation, research and monitoring projects, and program management.

Objective 2: Raise the public profile of the AMP.

Task 1: AMPA / Policy Co-Chairs / CMER Co-Chairs - By July 2009, develop and implement an AMP communication and outreach strategy.

Goal 5: Increase research capabilities and scientific knowledge

Objective 1: Strengthen and develop partnerships with other research organizations.

Task 1: AMPA / CMER Co-Chairs - On an ongoing basis, explore and develop partnerships with other natural resource research organizations. Report back to CMER and Policy biannually on progress.